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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/771,207	01/26/2001	Gregory H. Slocum	020431.0731	7186

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EXAMINER

JARRETT, SCOTT L

ART UNIT	PAPER NUMBER
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3623

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/771,207

Applicant(s)

SLOCUM, GREGORY H.

Examiner

Scott L. Jarrett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/1/2001.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Abstract

1. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The title of the invention implies the use of a sequential forecasting method, technique or algorithm for demand planning however the abstract makes no mention of sequential forecasting and the disclosure contains only nominal references to the use of

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sequential forecasting for demand planning and does not fully describe sequential forecasting or its application to demand planning.

The following title is suggested: Method of Demand Planning for Intermediate and By-Products.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-36 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The application or use of sequential forecasting is critical or essential to the practice of the invention, but not included in the claim(s) and is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

It is very old and very well known that a plurality of demand planning and demand forecasting methods, systems, algorithms, techniques and tools exists and are widely used by a plurality of companies in a plurality of industries however the disclosure makes only nominal references to the use of sequential forecasting as a technique for demand planning and does not describe the technique or its improvements/advantages over the well known and widely used demand planning methods and systems.

5. Claims 1-33 and 35-36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claims 1, 8, 14, 21 and 30 the specification does not reasonably provide enablement for determining the demand quantity of an end product or additional quantity of the intermediate product that can be produced. Further the disclosure fails to state or teach one of ordinary skill in the art the best mode (by hand, computer or like device) for determining the before mentioned values. Without this disclosure one skilled in the art would be unable to practice the invention without undue experimentation.

Regarding Claims 4, 10, 16, 22 and 27 the specification does not reasonably provide enablement for determining the total quantity of the by-product that would be produced. Further the disclosure fails to state or teach one of ordinary skill in the art the best mode (by hand, computer or like device) for determining the before mentioned values. Without this disclosure one skilled in the art would be unable to practice the invention without undue experimentation.

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Regarding Claims 7, 11, 12, 17, 25, 29 and 33 the specification does not reasonably provide enablement for generating contract terms. Further the disclosure fails to state or teach one of ordinary skill in the art the best mode (by hand, computer or like device) for generating the contract terms. Without this disclosure one skilled in the art would be unable to practice the invention without undue experimentation.

Regarding claims 26 the specification does not reasonably provide enablement for determining the demand quantity of an end product or quantity of the by-product that would be produced. Further the disclosure fails to state or teach one of ordinary skill in the art the best mode (by hand, computer or like device) for determining the before mentioned values. Without this disclosure one skilled in the art would be unable to practice the invention without undue experimentation.

Regarding Claims 35 and 36 the specification does not reasonably provide enablement for determining the demand quantity of an end product, additional quantity of the intermediate product that can be produced or quantity of the by-product that would be produced. Further the disclosure fails to state or teach one of ordinary skill in the art the best mode (by hand, computer or like device) for determining the before mentioned values. Without this disclosure one skilled in the art would be unable to practice the invention without undue experimentation.

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6. The following is a quotation of the second paragraph of 35 U.S.C. 112:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
7. Claims 7, 11, 12, 17, 25 and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite and failing to point out and distinctly claim the subject matter which the applicant regards as the invention.

Regarding Claims 7, 11, 12, 17, 25 and 29 the disclosure does not clearly define the phrase "contract terms." The phrase contract terms as claimed can read to include a plurality of concepts thereby making the term "contract terms" as claimed vague and indefinite. Examiner interpreted contract terms to mean any language or conditions associated with an agreement between two or more parties, written or oral, to do or not to do certain things.

Claim Rejections - 35 USC § 101

1. Claims 1-36 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The basis of this rejection is set forth in a two-prong test of:

- (1) whether the invention is within the technological arts; and
- (2) whether the invention produces a useful, concrete, and tangible result.

For a claimed invention to be statutory, the claimed invention must be within the technological arts. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) that do not apply, involve, use, or advance the technological arts fail to promote the "progress of science and the useful arts" (i.e., the physical sciences as opposed to social sciences, for example) and therefore are found to be non-statutory subject matter. For a process claim to pass muster, the recited process must somehow apply, involve, use, or advance the technological arts. Additionally, for a claimed invention to be statutory, the claimed invention must produce a useful, concrete, and tangible result.

Regarding Claims 1-36 the recited method and system for demand planning does not produce a useful, concrete, and tangible result. In considering Claims 1, 8, 14, 21, 26, 30, 31 and 34-36 simply making a quantity of a product (by-product, end product or intermediate product) available for use or for sale does not produce a useful, concrete and tangible result.

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Regarding Claims 1-7, 21-25, and 36, claims 1-7, 21-25, and 36 only recite an abstract idea. The recited method and system for demand planning does not apply, involve, or use the technological arts since all of the recited steps can be performed in the mind of the user or by use of a pencil and paper. The claimed invention, as a whole, is not within the technological art as explained above claims 1-7, 21-25, and 36 are deemed to be directed to non-statutory subject matter.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chase et al., Production and Operations Management: Manufacturing and Services (1995).

Chase et al. teach the application of widely practiced operations management approaches, techniques, methods and systems to the production of products/services. Chase et al. further teach that operations management (OM) is defined as the design, operation, and improvement of the systems that create and deliver the firm's primary products and services (Chapter 1, Page 5).

Chase et al. teach an operations strategy framework to be utilized by firms as a means for achieving their strategic goals (as shown in Figure 1 below; Exhibit 2.2, Page 29) and that this framework comprises a plurality of systems and tools herein after referred to collectively as the enterprise production management system (also referred to as computer integrated manufacturing, CIM, flexible manufacturing, FM, and factor of the future, FOF; Chapter 1, Page 17).

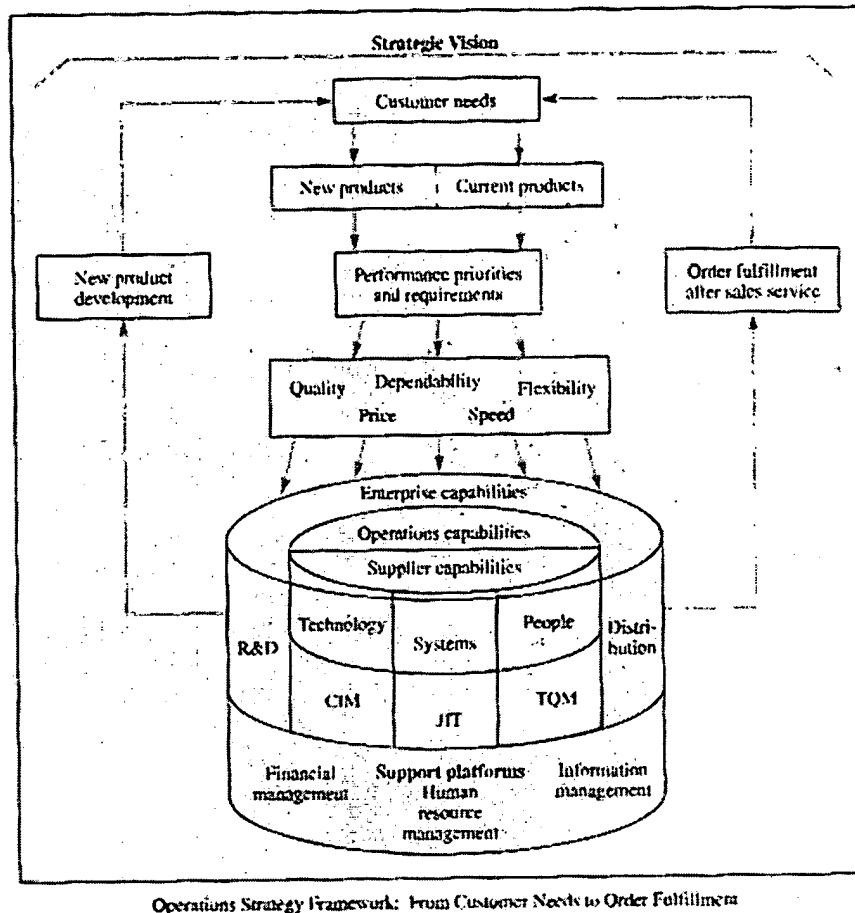


Figure 1: Operations Strategy Framework

Chase et al. teach that the enterprise production management system comprises a plurality of sub-systems including but not limited to:

- demand management (planning and forecasting) enabling the firm to understand all sources of demand (independent and dependent) thereby insuring its ability to produce the demanded products/services in an efficient and timely manner utilizing a plurality of well known demand forecasting methods and systems (Chapter 7, Sections 7.1-7.3 and 7.9, Pages 262-297; Exhibit 7.1 Page 266);

- capacity planning for determining the resources (equipment, materials, etc.) necessary to meet the demand for the firm's products/services and for determining the balance of products/services that the firm's resources can support (Chapter 7);

- production (aggregate) planning for determining/driving master production scheduling, material requirements planning, inventory on hand, production rate, workforce level and the like (Chapter 13; Exhibit 13.3, Page 519; Exhibit 13.5, Pages 524-525);

- inventory management to manage the levels of inventory (raw materials, component parts, supplies, finished goods, work-in-process, etc.; Section 14.1, Page 546) that are necessary to produce the demand quantity of the firm's products/services (Chapter 14 and 15);

- materials requirement planning (inventory management for dependent demand) for taking the end product requirements from the master production schedule and breaking them down into their component parts and subassemblies to create a materials plan (first and second generation MRPs; Chapter 15, Pages 588-600; Exhibit 15.23, Page 612) and that MRP II systems further comprise a plurality of components/sub-systems for managing the entire system from order entry through scheduling, inventory control, finance, etc. (Chapter 15, Page 588);

- operations/job-shop scheduling for optimally managing and scheduling production processes (Chapter 16); and

- materials management and purchasing for managing the complete cycle of material flow, from the purchase and the internal control of production materials to the

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planning and control of work-in-process to the warehousing, shipping and distribution of finished goods (Chapter 17).

Chase et al. teach:

- the creation, identification, management and use of by-products (waste, scrap, re-work, etc.) as part of the production system (Chapter 6, Pages 242-243; Chapter 15; Chapter 17, Exhibit 17.3);

- that a product is manufactured from a plurality of raw materials, intermediate products, component parts, subassemblies and the like (as shown in Figure 2 below; Chapters 5, 6 and 15; Exhibit 15.22, Page 611);

- that manufacturing firms can be classified into one or more combinations of three types of firms depending on the production processes utilized and products/services produced (as shown in Figure 3 below, Exhibit 19.3, Page 772); and

- that firms classified as a "V" firm transform a small number of raw materials into to a much large number of end products; and that chemical manufacturing/processing is classified as a "V" firm.

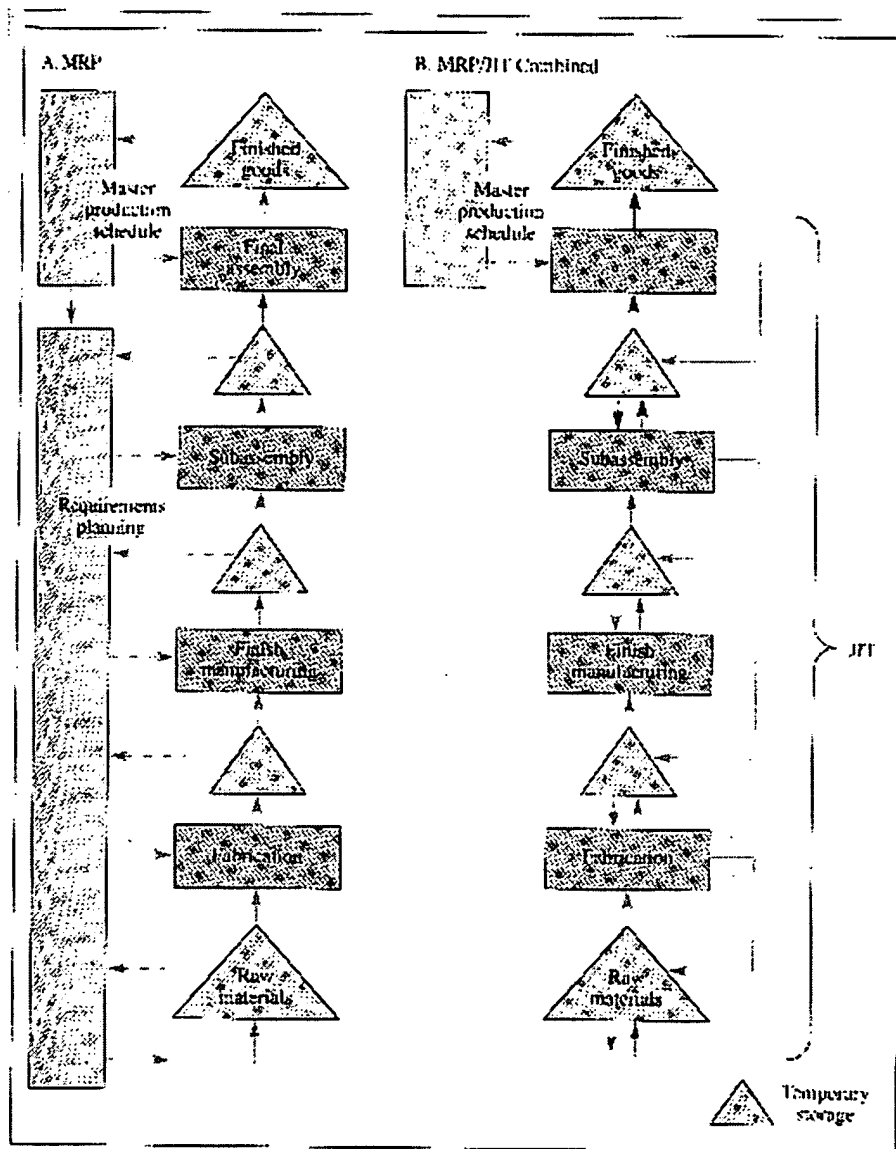


Figure 2: Production Processes

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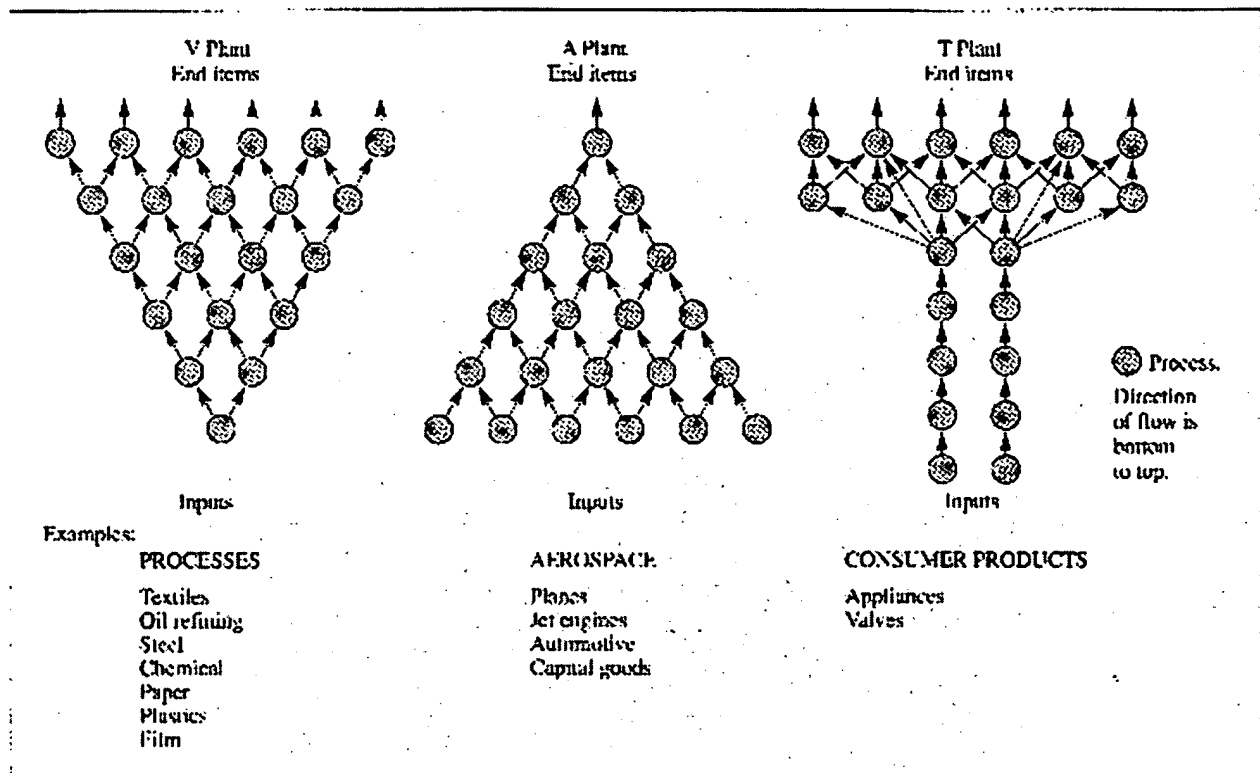


Figure 3: VAT Classification of Firms

Regarding Claims 1, 4, 5, 8, 10, 14, 16, 20-22, 26-27 and 30-31 Chase et al.

teach a demand planning method and system that:

- determines the quantity demand for one or more products/services (demand management, demand forecasting; Chapter 7);
- determines the resources (items, materials, equipment, etc.) necessary to produce the demand quantity of the products/services (Chapters 14-17);
- determines a plurality of production related parameters, data and statistics including but not limited to the quantity of stock/inventory, in their various states (end product, finished good, component parts, waste, scrap, re-work, raw materials, etc.) that

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can be (capacity planning; Chapters 8 and 19) or will be produced as a result of the production of one or more products/services (Chapter 15; Section 15.6 An Example using MRP, Pages 601-606; Exhibit 16.9, Page 650; Exhibit 16.10, Page 652);

- produces the products/services necessary to meet demand (Chapter 2; Chapter 7, Page 265; Chapter 10); and
- makes the products/services produced available for use or sale (Chapters 1, 2 and 7).

Chase et al. further teach basic building blocks of manufacturing and the utilization of synchronous manufacturing methods to improve a firm's ability to meet demand for its products/services in an efficient and timely manner (Chapter 19; as shown in Figure 4 below; Exhibit 19.5, Page 761).

More specifically Chase et al. teach that firms have the ability to manufacture a plurality of products/services that meet different/varying market needs (demand) and that a firm must select the optimal mixture of products/services to be produced given the firm's constrained resources in an effort to maximize profits (Chapters 7 and 19).

Further Chase et al. teach that the production of the product/services can be independent of one another or are the result of combining the two or more products/services, thereby themselves becoming intermediate products (component parts) of the newly produced product/service (Exhibit 19.5, Page 761, Descriptions D and A-C respectively).

EXHIBIT 19.5 *The Basic Building Blocks of Manufacturing Derived by Grouping Process Flows*

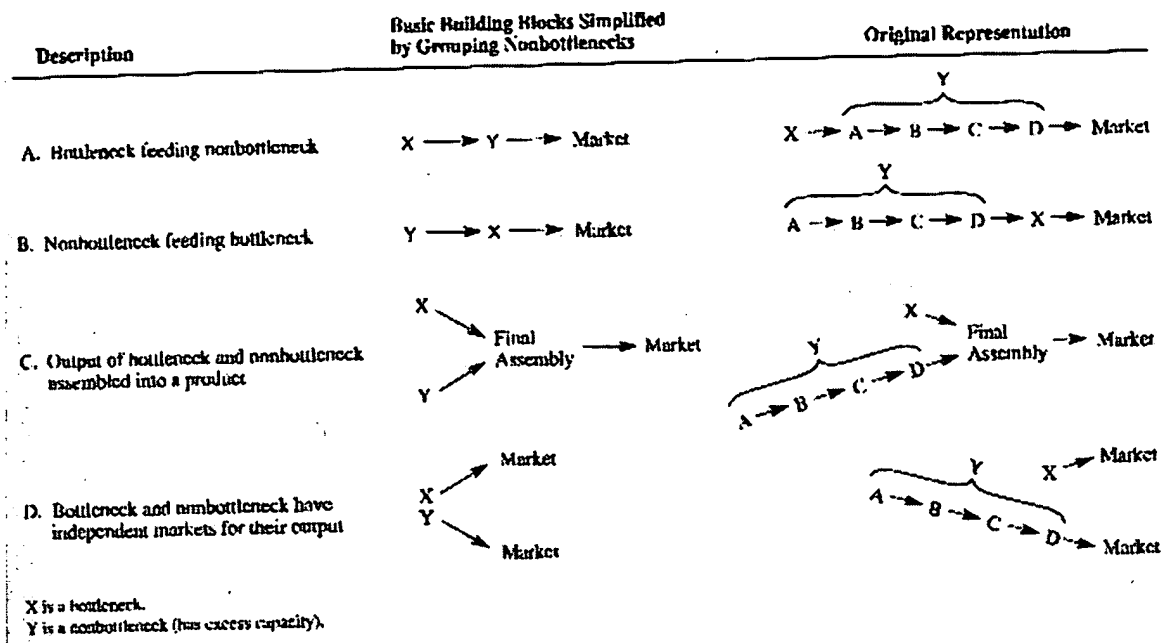


Figure 4: Manufacturing Building Blocks

Chase et al. does not expressly teach the utilization of the demand planning system for determining the demand for intermediate products or by-products or for making the intermediate products or by-products available for sale or for use in generating additional demand for the intermediate product.

Official notice is taken that demand planning systems or in the more general case enterprise management systems are used to manage any of a plurality of items in the production process. All that is required to make an item available for use or sale (including managing the demand for that product) is to identify in the enterprise management system that item is a product/service the firm wishes to sell. In essence the terms used to describe a product/service or item (end product, by-product, raw

materials) are relative and merely useful in assisting companies in communicating their specific use of the product/service (item).

An example of the relative nature of an items descriptor is in supply chains. A supply chains being defined as the linked set of resources and processes that begins with the sourcing of raw material and extends through the delivery of end items to the final customer. It includes vendors, manufacturing facilities, logistics providers, internal distribution centers, distributors, wholesalers and all other entities that lead up to final customer acceptance. The extended supply chain for a given company may also include secondary vendors to their immediate vendors, and the customers of their immediate customers.

Each firm in the supply chain receives items ("raw materials", "intermediate products", "by-products", etc.) from the firm downstream of it, processes those items and then providing its items ("end products") to the next firm in the supply chain wherein the process repeats itself. Each firm is both a producer and consumer of items making one firm's end product another firm's intermediate product or raw material.

In the coal industry, for example, coal is provided as a raw material to be used for the production of electricity. During the electricity production process a by-product known as coal ash is produced and further sold as a raw material to firms which utilize the coal ash as a raw material for the production of aggregates for building materials like concrete. The concrete is then used as a raw material in the production of highways and buildings.

Official notice is taken that it is old and very well known in the art that firms utilize enterprise management systems to manage intermediate products and by-products for in doing so those firms:

- maximize profits and increase competitiveness by minimizing wastes and increasing the depth and breadth of products/services that can be produced and sold;
- meet government regulations by insuring the proper use and disposal of by-products and intermediate products;
- achieve social or environment goals/values of the firm.

It would have been obvious to one skilled in the art at the time of the invention that the enterprise management system as taught by Chase et al. would have been used to manage a plurality of items (products/services) in a supply chain thereby making those items available for use or for sale to the customers of the supply chain or other firms in the supply chain thereby providing a means for the firms involved in the supply chain to maximize profits and meet government regulations regarding the handling of items.

Regarding Claims 2, 9 and 15 Chase et al. teach an enterprise production management system further comprising of capacity planning, materials requirements planning and inventory management sub-systems as discussed above and that these

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sub-systems are to determine a plurality of parameters, statistics and data necessary to manage the production processes and systems.

More specifically Chase et al. teach that these product parameters, data and statistics include but is not limited to production capacity (amount and type of items that can be produced), product demand, the amount of products/services (actual production) produced, excess inventory (the difference between inventory available and inventor used during) and additional quantities (work-in-process, component and raw material inventory levels) produced or capable of being produced (Chapters 7-8, 13-15; Chapter 15, Section 15.6, An Example using MRP, Pages 601-606).

Regarding Claims 3 and 23 Chase et al. teach making a plurality of products available for sale (marketing strategy, sales organization, customers, demand; Chapters 2, 4 and 7).

Regarding Claims 6, 13, 19, 24, 28 and 32 Chase et al. teach that the enterprise management system can be utilized for a plurality of products, process and industries including but not limited to the chemical products or processes (as shown in Figure 3 above, Exhibit 19.3, Page 772).

Regarding Claims 7, 11, 12, 17, 25, 29 and 33 Chase et al. teach that the operations management framework and enterprise management system are utilized in capturing and fulfilling customer orders (contracts).

Chase et al. does not expressly teach the generation of contract terms based on quantity of stock items produced or available as a result of the firm's production processes.

Official notice is taken that one goal of an enterprise management systems is to generate information that can be utilized in responding and committing to, in contractual or other form, the demands of a firm's customers. Further demand planning and production scheduling specifically generate production parameters directly related to the terms of the commitment sought by the customer (contract, order) including but not limited to the products/services' availability date, available quantity, cost, etc.

It would have been obvious to one skilled in the art at the time of the invention that the enterprise management system, which provided support for order management, demand planning and production planning, as taught by Chase et al. would have benefited from generating a plurality of contract terms (information, date of availability of order, price, quantity available, etc.) based on information readily available from the enterprise management system thereby insuring the firm's ability to meet the customer's demand.

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Regarding Claim 34, claim 34 recite similar limitations to Claims 1, 3, 4 and 23 and is therefore rejected using the same art and rationale as applied in the rejection of Claims 1, 3, 4 and 23.

Regarding Claim 35 and 36, claim 35 and 36 recite similar limitations to Claims 1, 3 and 23 and is therefore rejected using the same art and rationale as applied in the rejection of Claims 1, 3 and 23.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Tsukishmia et al., U.S. Patent No. 6,535,773, teach a demand planning (material requirements planning) system utilized for determining demand types and quantities (total and net quantities) of intermediate products (parts) and raw materials necessary to produce the demand quantity of at least one end product.

- Carson Jr. et al., U.S. Patent No. 4,646,238, teach a demand planning (materials requirements planning) system for determining the demand quantity of end products and by-products that can or would be produced and made available for sale. Carson Jr. et al., further teach that the demand planning system includes the planning and management of by-products.

- Crosswhite, U.S. Patent No. 6,611,726, teaches a demand planning (forecasting) method utilizing optimal time series forecasting parameters. Crosswhite further teaches the use of a plurality of forecasting tools, techniques, systems and methods commonly used by firm's to predict (forecast) any form of business data.

- Gleditsch D. et al., U.S. Patent No. 6,393,332, teach a demand planning method that insures an firm's ability to meet unanticipated demand. Gleditsch D. et al., further teach that the demand planning system determines what and when manufacturing resources (machines, raw materials, etc...) are going to be needed to produce an end product.

- Willemain et al., U.S. Patent No. 6,205,431, teach a demand planning system and method that determines the demand quantity of products (intermediate and end) based on intermittent demand.

- Yamamoto et al., U.S. Patent No. 5,854,746, teach a demand planning system for determining the type and quantity of products (end and intermediate) and raw materials necessary to meet sales demand based on demand information acquired from point-of-sale systems.

- Shipman, U.S. Patent No. 5,819,232, teaches a method for demand planning wherein product demand quantities are determined and used to drive inventory planning and production scheduling. Shipman further teaches a plurality of statistical forecasting methods and the improvements to those statistical methods utilized by the demand planning method.

- Cheng et al., U.S. Patent No. 6,138,103, teach a production planning system that utilizes a sequential decision-making (scenarios) tool for demand planning in an uncertain demand environment.

- Wu et al., U.S. Patent No. 6,054,074, teach a method for making manufactured aggregates from coal combustion by-products.

- Jenkins et al., U.S. Patent Publication No. 2002/0188499, teach a demand planning and forecasting system wherein contracts terms are fulfilled (customer orders).

- Signh et al., U.S. Patent Publication No.2002/0169657, teach a system and method for demand forecasting and planning for a plurality (all types) of items (products, related products, etc.).


- Littman M.L., Algorithms for Sequential Decision Making, teaches sequential decision-making techniques, tools and methods that can be used to determining optimally or nearly optimal solutions for problems expressed as a sequence of decisions each influenced by past decisions and influencing future ones.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott L. Jarrett whose telephone number is (703) 306-5679. The examiner can normally be reached on 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hafiz Tariq can be reached on (703) 305-9643. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SJ
12/10/2004



TARIQ R. HAFIZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600